

INTRODUCTION TO MANUFACTURING

Credit Hours: 3 Semester Hours
Pre-Requisite: None
General Course Description: This course introduces students to modern manufacturing organizations, technology, business systems, and problem solving. Provides the fundamentals of Lean Manufacturing, Quality Systems and Statistical Process Control, documentation and standard operating procedures, concepts in measurement, geometric dimensioning and tolerancing, visualization and graphics.
The Introduction to Manufacturing course must cover at least seventy percent of the following learning outcomes, and must cover all learning outcomes marked with an asterisk (*)
Students who successfully complete an Introduction to Manufacturing course are expected to demonstrate all of the following:
<ol style="list-style-type: none">1. Examine the manufacturing organization, technology, business systems, and goals of each segment such as safety, quality, maintenance, operations, engineering, supply chain, and finance.2. Demonstrate problem-solving, critical thinking and communication skills. *3. Describe the fundamentals of Lean Manufacturing. *4. Articulates basic principles and purpose of Quality Control and Quality Systems and examine the basic concepts for Statistical Process Control (SPC). *5. Utilize standard operating procedures/checklists in paper or digital format. *6. Documents work using industry records, standard operating procedures (SOPs), and travelers that provide traceability. *7. Examine maintenance strategies such as predictive, time based, preventative, and corrective. *8. Use basic measurement and precision tools and techniques. *9. Examine visualization and graphics as a major component in engineering technology, graphics, and visualization techniques. *10. Examine the basic concepts of Geometric Dimensioning and Tolerancing. *11. Analyze measurements and perform technical calculations. *